

HORTICULTURE CASE STUDY

Solagron



About Solagron

Established in 2017, Solagron is a high-tech agricultural company that produces nutrient rich microalgae. Solagron's output is used in a range of secondary products including live feeds, animal feeds, and aquafeeds, as well as fertilisers and pharmaceuticals.

Water-based agriculture presents a tough lighting challenge

Microalgae plays a crucial role in the earth's ecology. As well acting as a highly effective wastewater treatment, the organism's high nutritional value makes it an excellent choice for animal meal supplements, aquafeeds, and biofuels alike. Vietnamese company Solagron specialises in the production of this microscopic miracle at an expansive facility in Tra Vinh Province.

While microalgae can be grown under natural light, the process is slow – taking almost a week for a single pool of algae to be ready for harvesting. Wanting to speed this process up through the use of artificial lighting, but keen to keep its environmental impact to a minimum, Solagron enlisted the help of Midstream Lighting.

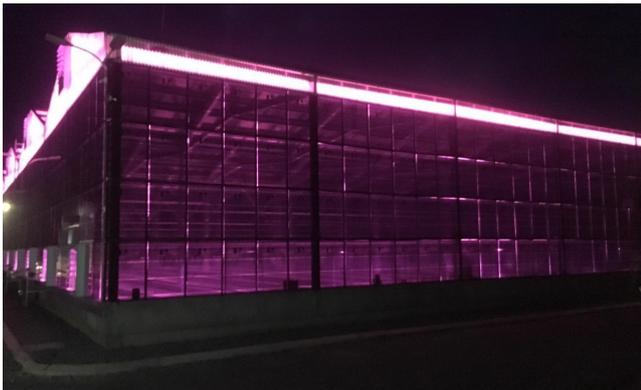
Location: Tra Vinh Province, Vietnam

Products and services provided:

- Design of a uniquely customised grow lighting solution for microalgae production.
- Manufacture and installation of 627 Flare series luminaires.

Key achievements:

- Specialised light spectrum dramatically reduces crop production times.
- Energy efficient solution runs entirely on renewable power.
- Robust, IP67-rated build offers complete protection in a humid environment.
- Smart design enables safe and easy installation above water.



A specialised spectrum delivers a dramatic reduction in yield times

In addition to seeking Midstream's assistance, Solagron also hired the services of an agronomist. With their help, Solagron was able to determine the ideal light spectrum for microalgae propagation – a range that Midstream was able to recreate using the LED boards in its Flare series of luminaires.

As well as being able to meet this unique design requirement, the build quality of the Flares also made them perfect for the demands of Solagron's greenhouse-like environment. IP67-rated, the luminaires offer the highest standard of ingress protection, ensuring that they are well protected against the naturally moist atmosphere of the production facility.

The design of the Flare units has helped Solagron to realise additional benefits, too. Their compact nature, made possible by a proprietary cooling system, minimises shade and ensures that the maximum amount of light reaches the pools – an average of 131 $\mu\text{mol}/\text{m}^2/\text{s}$.

The luminaire's copper-based PCB, meanwhile, minimises heat build up and ensures high performance across a long lifespan, perfect for a system where access to the lights is severely limited.

Highly energy efficient – sufficiently so that 627 Flares are powered exclusively by solar panels mounted on the roof of the facility – the luminaires have helped Solagron to reduce microalgae production times from around four to five days to just a matter of hours.